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# FOREIGN CROPS AND MARKETS

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FEATURE ARTICLE

## BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY [illegible]

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# LATE CABLES

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Argentine drought zone unrelieved during week ended September 20. Season so advanced and crop condition so poor that production in the Provinces of Cordoba and Santa Fé and in the Territory of La Pampa may not exceed 50 percent of normal. Flaxseed acreage also substantially reduced and prospective yields appear unpromising. (Agricultural Attaché P. O. Nyhus, Buenos Aires, September 20, 1935.)

Poland 1935 production estimated in bushels as follows, with 1934 comparisons in parentheses: Wheat [illegible],450,000 (76,440,000), rye 251,246,000 (254,476,000), barley 65,633,000 (66,717,000), oats 176,712,000 (175,729,000), potatoes 1,079,776,000 (1,229,815,000). (International Institute of Agriculture, Rome, September 20, 1935.)

London wool sales continue cautious but with broader competition than at opening on September 17. German, Austrian, and Belgian buyers taking most of the large offerings of weft merinos and scoured Queensland merinos. British the chief buyers of warp merinos and greasy crossbreds. Russia taking a few good scoured and greasy merinos. (Agricultural Attaché C. C. Taylor, London, September 20, 1935.)

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# CROP AND MARKET PROSPECTS

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## BREAD GRAINS

### Summary of recent estimates

Although the September estimate of the 1935 German wheat crop is slightly higher than that of August, it was offset by a decline in the estimate for Bulgaria, which decreased the total crop of 41 countries reporting to 3,048,577,000 bushels. This compares with 2,952,044,000 bushels harvested by these same countries in 1934, when they accounted for about 85 percent of the estimated world total, excluding China and Russia.

The 1935 rye production, as reported for 19 countries, is estimated at 606,897,000 bushels as compared with the 1934 crop of these countries, amounting to 557,668,000 bushels. The crops of Germany and Bulgaria were revised downward during the past week; the German harvest is now placed somewhat under that of 1934, but a gain of about 18 percent is indicated for Bulgaria.

Current changes in wheat and rye estimates

| Commodity and country | Reported up to Sept. 16, 1935 | Reported up to Sept. 23, 1935 | 1934 |
|---|---|---|---|
| | 1,000 bushels | 1,000 bushels | 1,000 bushels |
| Wheat | | | |
| 41 countries reported.......... | 3,049,643 | | |
| Germany...................... | 171,150 | 171,775 | 166,541 |
| Bulgaria..................... | a/ 49,604 | 47,913 | 41,578 |
| 41 countries reported.......... | | 3,048,577 | 2,952,044 |
| Rye | | | |
| 19 countries reported.......... | 620,460 | | |
| Germany...................... | 309,274 | 297,188 | 299,496 |
| Bulgaria..................... | 9,232 | 7,755 | 6,576 |
| 19 countries reported.......... | | 606,897 | 557,668 |

a/ Belgrade office, Foreign Agricultural Service.

### Crop conditions in the Southern Hemisphere

#### Australia

The Australian wheat crop showed general improvement during the past month, according to a cable from the International Institute of Agriculture at Rome. In the most important wheat-producing state, New South

## CROP AND MARKET PROSPECTS, CONT'D

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Wales, rainfall was inadequate during August but has been almost general this month, and crop conditions are considered to be satisfactory. The condition of the crop in South Australia is reported to be good. The weather in Victoria is favorable throughout, and the crop condition satisfactory. Favorable weather is also reported in Western Australia, where the crop has improved, but rust is reported in the northern part of the state.

### Argentina

A rain of from 3/4 to 1 inch on September 6 in the Province of Entre Rios will aid the germination of wheat and flaxseed sowings and make additional sowings of flaxseed possible, according to a cable from Agricultural Attaché P. O. Nyhus at Buenos Aires. With the exception of a small district in the western part of the Province of Cordoba, rainfall in the remainder of the drought zone was negligible.

Prior to this rain, it was reported by Mr. Nyhus that the failure to receive additional rains in the drought areas following those of August 7, 8, and 16, had brought about a more general drought situation than that experienced before August 7. The Provinces of Entre Rios, Cordoba, most of Santa Fé, and the Territory of La Pampa were considered to be actually suffering from the drought. Only in a comparatively narrow strip of country running north and south through the Province of Santa Fé was the rainfall fairly substantial, making possible an increase in the wheat acreage sown in Cordoba and Santa Fé.

Apprehension with regard to the far-reaching effect of the drought was becoming more and more general in early September, especially in Entre Rios, Cordoba, and La Pampa, the poor crop prospect being a cause of deep concern. On the other hand, this was considered an early date on which to make forecasts, since much could happen later on to improve prospects. Rain before September 15 and good growing conditions from that date forward might result, it was then thought, in good wheat yields in Santa Fé and Cordoba.

The wheat crop in the Province of Buenos Aires was not affected by the drought and has done well. In the next most important province, Cordoba, a reduction of about 35 percent from that of last season is estimated to have taken place. While stands were uneven before the rains of August 7, very little of the seed failed to germinate thereafter. Subsequent sowings were even but stands were weak. Several days of hot, windy weather had dried out the soil, brought growth to a standstill, and there was again an urgent need of moisture.

## CROP AND MARKET PROSPECTS, CONT'D

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### Oriental wheat markets

#### China

The Shanghai wheat and flour market advanced during the week ended September 13, largely as a result of the higher prices prevailing on foreign wheat, according to a radiogram from the Shanghai office of the Foreign Agricultural Service. A greater gain in quotations of wheat and flour for forward delivery was noted than in early months. Prices of foreign wheat are reported to be nearly 10 percent too high in comparison with local flour prices, and flour mills are now more anxious to buy domestic wheat. Several buyers have been sent into the interior since wheat arrivals at Shanghai continue to be below those of last season. The mills are still operating on full time, with flour stocks unchanged. Although the demand for flour continues to be fair, it shows a slight decline when compared with that of the corresponding season in 1934.

Wheat prices, c.i.f. Shanghai duty included, for October shipment, were quoted as follows: Australian (New South Wales) 90 cents per bushel, Western White No. 2, 93 cents. Domestic standard wheat for September delivery was 73 cents per bushel, October 76 cents, November delivery 78 cents per bushel. Domestic flour for September delivery was 89 cents per bag of 49 pounds, October 90 cents, November 91 cents per bag. Australian flour, c.i.f. Hongkong, was quoted at $3.36 per barrel of 196 pounds. Imports of flour into Tientsin during the month of August totaled 325,000 barrels, of which 320,000 barrels came from Shanghai. August mill production amounted to 133,000 barrels.

#### Japan

There was no immediate prospect on September 5 for the sale of United States wheat in Japan, according to information furnished the Shanghai office by Consul General Garrels at Tokyo. The domestic flour market was strong on September 1, with export demand fair. Mills were running at full capacity in order to cover both export requirements and the good domestic demand prevailing.

Wheat quotations per bushel at the mill on September 1 were reported as follows, duty and landing charges included: Western White No. 2, $1.15; Canadian No. 1, $1.70, No. 3, $1.58; Australian and Argentine $1.09; domestic standard 97 cents per bushel. Portland wheat, c.i.f. Yokohoma, duty and landing charges excluded, was 81 cents per bushel. The wholesale price of flour at the mill on September 1 was quoted at $1.08 per bag of 49 pounds. Imports of wheat into Japan during July in bushels, were reported as follows, with 1934 comparisons in parentheses:

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Canada 278,000 (227,000), United States 0 (302,000), Australia 659,000 (490,000), Argentina 326,000 (0), others 0 (39,000), total 1,263,000 (1,058,000). July flour exports totaled 225,895 barrels as compared with 199,606 barrels reported for July 1934.

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## FEED GRAINS

### Situation in the Danube Basin

The 1935 corn crop in Hungary, Yugoslavia, Rumania, and Bulgaria is unofficially estimated at 413,000,000 bushels, a reduction of about 95,000,000 bushels from the large crop harvested last year, according to the Belgrade office of the Foreign Agricultural Service. Average production in the 5 years, 1929-1933, was 473,000,000 bushels. The latest official estimate places the 1935 Danubian barley crop at 110,000,000 bushels compared with 92,000,000 bushels harvested in 1934. The 1935 oats outturn is officially indicated to be 87,000,000 bushels as against 114,000,000 bushels produced in 1934. Barley and oats estimates of the Belgrade office are slightly higher than the official estimates.

The reduction in the corn crop is expected despite the largest planted area since the World War, 23,825,000 acres. Persistent drought this summer lowered yields in Hungary and Yugoslavia. Bulgaria and Rumania received somewhat more rainfall, but much less than average. Both the barley and oats areas are the smallest post-war acreages on record. Early May frosts caused heavy loss of barley and oats acreage which in many cases was subsequently planted to corn. The corn crop in Hungary is unofficially estimated at 59,100,000 bushels, in Yugoslavia at 126,000,000 bushels, in Rumania at 196,800,000 bushels, and in Bulgaria at 31,500,000 bushels. Last year Hungary produced 82,599,000 bushels, Yugoslavia 202,910,000, Rumania 190,786,000, and Bulgaria 32,262,000 bushels.

Because of the reduction in the 1935 corn crop, the quantity of barley and oats available for export this season will be much less than was estimated earlier. Including carryover from the 1934-35 crop the exports of barley are not likely to be more than 20,000,000 bushels, and of oats 3,800,000 bushels, according to the Danube Basin office. Average exports of barley during the 5 years 1929-30 to 1933-34 were 49,000,000 bushels, and of oats 4,600,000 bushels. Rumania is the only Danubian country which may have any important marketable feed grain surplus during the 1935-36 marketing year. Active foreign demand and the expectation of a smaller feed crop this year raised feed grain prices sharply during August. When general rains fell at mid-month feed grain prices declined slightly, but remained much higher than during July.

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## CROP AND MARKET PROSPECTS, CONT'D

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## COTTON

### World total cotton consumption up; less American used

World mill consumption of cotton increased during the year ended July 31, 1935. An estimate of the International Federation of Master Cotton Spinners' and Manufacturers' Associations places consumption of all growths in the leading countries, except Germany, at 24,416,000 bales. An estimate for Germany, made by the Bureau of Agricultural Economics from sources considered reliable, raises the total consumption figure for the year indicated to 25,798,000 running bales. That figure was 687,000 bales larger than the 1933-34 total and the largest since 1928-29. According to the estimates indicated, consumption of American cotton amounted to only 11,352,000 bales, a reduction of 2,182,000 bales from the preceding year's figure and the lowest since 1930-31, when consumption of American cotton stood at 10,901,000 bales.

Mill consumption of "Sundries" accounted for most of the 1934-35 gain over recent years, with a total of 7,479,000 bales. That figure is the largest on record for those growths and was 1,782,000 bales larger than consumption in 1933-34. Increased use of Brazilian cotton was an important factor in the larger Sundries figure. A total of 5,772,000 bales is reported for the 1934-35 consumption of East Indian cotton. This was an increase of about 1,000,000 bales over the 1933-34 figure and was the highest level reached since 1930-31. The use of Egyptian cotton also reached an unusually high total, 1,195,000 bales against 1,108,000 bales consumed in 1933-34.

World mill stocks of all types of cotton as of August 1, 1935, have been estimated at 4,803,000 bales against 5,334,000 bales a year earlier. Practically all of the decline in the current figure is explained by the fact that stocks of American cotton stood at only 1,707,000 bales, the smallest mid-year figure recorded since August 1924, and 597,000 bales below that of a year ago. Current stocks of East Indian, at 1,552,000 bales, also registered a slight decline below last year's figures, while the stocks of Egyptian, of 280,000 bales, were slightly higher than a year earlier and also the largest on record for that date. Stocks of "Sundries," at 1,264,000 bales, also established a record, and were 161,000 bales larger than on August 1, 1934.

### Chinese and Manchurian cotton crops low

In most parts of China the weather conditions during the past month were favorable for the cotton crop, according to Fred J. Rossiter, Acting Agricultural Commissioner at Shanghai. However, available information indicates that China's forthcoming crop will amount to about

## CROP AND MARKET PROSPECTS, CONT'D

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2,656,000 bales, or 15 percent below last year's production. This is largely attributed to the reduced acreage in North China, resulting from dry weather conditions at planting time. Production of long staple types of cotton, such as Lingpao and Shantung-American, is expected to show a still greater decline. In many areas the cotton crop is about 10 days late and good maturing weather is needed in order to avert a further crop reduction. The 1935 Manchurian crop is estimated at about 55,788 bales as against 86,471 bales in 1934. The expected decline is due to a 30 percent reduction in acreage which was caused by dry weather during the sowing season and by excessive rainfall and floods during the months of July and August.

The Shanghai mill activity was slightly larger in August than in July. Chinese and Japanese mills operated at 60 and 85 percent capacity, respectively. The Tsingtao mills have curtailed their work because their Shantung yarn and piece-goods market has declined. One Chinese mill in Tientsin is reopening in September which makes a total of 4 mills operating there. Three Hankow mills are running near capacity.

Cotton and yarn prices declined during the last week in August, following the decline in prices of American cotton, but yarn prices have improved slightly since the beginning of September. The demand for yarn is expected to show some improvement this fall, but is not expected to equal last season's demand. During the month of August, Japanese mills reduced their consumption of American cotton by substituting Chinese long staple Lingpao. This move of lowering the quality of their cotton yarn was prompted by poor yarn prices. With the price of Lingpao relatively cheaper than American cotton, the mill owners expect to use it in a limited proportion in place of American.

The Shanghai mill and wharf stocks of American and Indian cotton continue to decline; the carryover of the old domestic cotton crop by the end of August was considerably larger than that of the past few years. It is expected that the consumption of American and Indian cotton during the first half of the crop year, beginning October 1, will be smaller than during a similar period a year ago; in view of the shortage of the domestic long staple cotton, a larger amount of American will be required during the last half of the crop year.

China's raw cotton imports during July amounted to 9,920 bales of American, 7,311 Indian, 950 Egyptian, and 27 bales from all other cotton-growing countries. China's cotton imports, in bales, from October 1 to August 1 this year and last year, respectively, amounted to 125,000 and 261,000 American, 97,000 and 202,000 Indian, 26,000 and 16,000 Egyptian,

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and 2,000 and 4,000 from all other cotton-producing countries. These figures indicate that during the period of October 1, 1934, to August 1, 1935, China imported 250,000 bales of cotton compared with 483,000 bales during a similar period a year earlier.

On September 11 the following prices were quoted for November delivery: Cotton yarn 14.89 cents per pound, Chinese cotton 10.51 cents, and Lingpao 13.14 cents. The following are the Shanghai price quotations for immediate delivery: American Middling 7/8, 14.28 cents, and Indian Akola, 12.10 cents per pound. The August piece-goods market was very dull. The Chinese imports of piece goods during July 1935 amounted to $397,790 and exports to $82,347; in July 1934, the Chinese imports and exports of piece goods amounted to $476,651 and $195,360, respectively.

According to preliminary information the following shipments of raw cotton reached Shanghai in August: American 1,700 bales, Indian 5,359, Chinese 36,491, and Egyptian 586 bales, a total of 44,136 bales of cotton. During the month of August the Shanghai mills consumed 72,000 bales of cotton, 5,000 of which were American, 5,000 Indian, and 52,000 bales Chinese. On August 31 the cotton stocks of the Shanghai warehouses consisted of 34,000 bales of American, 5,000 Indian, 97,000 Chinese, 2,000 Egyptian, and 1,000 bales from all other cotton-growing countries.

The August Japanese yarn production amounted to 80,235 bales of 19-count and below, 76,792 bales of 20 to 22-count yarn, 115,543 bales of 23 to 44-count, and 9,586 bales of 45-count and above, a total of 282,156 bales.

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## FRUIT, VEGETABLES, AND NUTS

### Cuban grapefruit shipments retarded

The 1935-36 Cuban grapefruit season (July to June) began about 2 weeks late because of the long winter drought which delayed ripening of the fruit in the Isle of Pines, according to information available in the Foreign Agricultural Service. The size of the crop was adversely affected by the drought and also by the fact that growers made so little profit on the 1934-35 crop that fertilizer was applied sparingly. Shipments from the Isle of Pines in the 1934-35 season totaled 187,000 boxes. Some of this fruit was consumed in Cuba, but the greater part went to the United States or overseas. Import figures show that around 109,000 boxes of grapefruit were received from Cuba for consumption in the United States.

## CROP AND MARKET PROSPECTS, CONT'D

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Exports from Cuba during 1935-36 will probably fall short of the figure reached the preceding season, since only 13,361 boxes had been moved from the Isle of Pines from July 1 to August 25, against about 85,000 boxes during the same period in 1934. The low rate of duty on Cuban grapefruit is in effect in the United States until September 30. Consequently, the bulk of the Cuban shipments will probably be made before October 1. The duty amounts to .6 cent per pound from August 1 to September 30, and 1.2 cents per pound the remainder of the year.

### Puerto Rican grapefruit crop above 1934-35

A somewhat larger grapefruit crop is expected in Puerto Rico during the 1935-36 season, according to A. S. Mason, supervising inspector at San Juan. As nearly as can be determined at this time, Puerto Rico will produce a grapefruit crop of around 700,000 boxes compared with 650,000 boxes in 1934-35. About 43,000 boxes were shipped from the Island in July and 34,000 boxes in August. Shipments during September should be around 90,000 boxes, and about 100,000 boxes will be ready to move in October. The movement during the next few months will be light, but, according to Mr. Mason, there will be 450,000 boxes maturing between January and July of 1936. The fruit that is now being shipped is fully mature, which is exceptional for this time of year. Quality is not as good as usual since growers did not make enough last season to properly care for their groves. Sizes are small.

### Cuban avocados unprofitable

Cuban avocados have been rather unprofitable this summer, despite the improvement in grades and greater attention being given. Exports to the United States during July and August totaled 104,882 crates, or somewhat more than in the same months of 1934. The quality this year is better than usual, according to Vice Consul W. N. Walmsley, Jr., at Habana. In some cases flats have not brought more than 40 or 50 cents. The minimum weight per fruit has been raised from 10 to 12 ounces in an attempt to bolster prices. The season for avocados runs from June 1 to September 30 by agreement with the United States. This season, shipments did not get under way until June 20, due to the lateness of the crop. There is no duty on Cuban avocados.

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## LIVESTOCK, MEAT, AND WOOL

### Great Britain takes less American lard

British imports of American lard during the marketing season ending September 30 have been considerably smaller than those of a year

## CROP AND MARKET PROSPECTS, CONT'D

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earlier, as a result of the reduced American supplies available for export. Imports of American lard have represented a much smaller than usual proportion of the total British imports of that commodity. Lard prices advanced in Great Britain during August. Prices of American hams also advanced in that market but bacon prices declined. British imports of bacon in July were larger than in any month since February but continued below the import level of a year ago.

Supplies of hogs for slaughter in the United States are expected to show some seasonal increase in the next few months. In the coming winter marketing season, October to April 1935-36, however, slaughter will be much smaller than in the preceding year. Domestic hog prices advanced sharply in August and in early September such prices were higher than at any time since 1929. With a larger American corn crop in 1935 than in 1934 now fairly certain and with a hog-corn price ratio relatively high, a considerable increase in the 1935 fall pig crop and in the 1936 pig crop is probable. See release HP-70, "World Hog and Pork Prospects," September 1935.

### New Zealand beef exports larger than last year

Total exports of beef from New Zealand and exports to the United States were larger in the period October-July 1934-35 than in the corresponding 1933-34 period, according to Consul General G. A. Bucklin at Wellington. Total exports of frozen beef in the 1934-35 period were somewhat smaller than in the corresponding months of 1933-34, but exports of that product to the United States in the current period reached 16,327 quarters against none so exported a year earlier. Exports of boneless beef in bags to the United States during the 1934-35 period reached 24,474 bags against none a year ago. Total exports of this item, reaching 232,000 bags, were somewhat larger than a year earlier, most of the exports going to Great Britain. The United States does not participate in the New Zealand export trade in chilled beef but exports of that item to Great Britain reached 52,000 quarters in the 1934-35 period against 18,000 quarters in the corresponding months of 1933-34.

### New Zealand has larger wool carryover

The wool carryover in New Zealand, as of June 30, 1935, is estimated at about 87,000,000 pounds, grease basis, according to Vice-Consul W. W. Orebaugh at Wellington. That figure is about 38,000,000 pounds larger than the quantity carried over into the 1934-35 season. The current carryover figure is the largest since that of June 30, 1932, and is about 2,000,000 pounds larger than the average for the 5 years 1930-1934. The increase in the 1935 figure is attributed largely to the downward tendency in wool prices in effect during the 1934-35 season.

## CROP AND MARKET PROSPECTS, CONT'D

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### London wool sales close

The fifth series of the London wool sales opened on September 17. The chief buyers were from Yorkshire, with small orders from German, French, and Netherlands buyers. Superior greasy merinos closed at par and average greasy merinos 5 percent lower. Scoured merinos closed mostly at par to 5 percent lower. Fine greasy crossbreds were firm, with medium and low greasy crossbreds 5 percent lower. All scoured crossbreds and slipes closed at firm levels.

### Australian wool sales open

The Brisbane, Australia, wool sales opened September 16 with a good selection. Competition was keen, with the Japanese being the chief buyers. There was also good support from German bidders. Prices were firm compared with the closing of the previous series at Sydney on September 12.

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## INTERNATIONAL GROUP CONSIDERS AGRICULTURAL PROBLEMS

The position of agriculture under a planned economy, the world edible fats problem and hog production-control programs, were the leading topics considered by the recent Brussels conference of the International Commission of Agriculture. The Commission, which is affiliated with the International Union of Agricultural Associations, brought together 110 delegates, representing 53 agricultural organizations. Other agencies represented were the Belgian Ministry of Agriculture, The League of Nations, The International Labor Office, The International Institute of Agriculture, and The International Cooperative Alliance.

This year's assembly of the Commission, which is fundamentally unofficial in character, registered the conclusion that in spite of the fact that measures had been taken in several countries since 1932 to improve the economic position of agriculture, the general position of farmers had failed to improve. The Commission is convinced that the 2 main problems to be solved in connection with world agriculture are (1) wheat and (2) edible fats. It argued for the prolonging and improving of the London Wheat Agreement of 1933. It also went on record as favoring control measures limiting the consumption of vegetable and fish oils in an effort to maintain a normal production and consumption of butter and lard. The United States was not represented at the sessions of the Commission.

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# THE SOVIET UNION 1935 FALL PLOWING PLAN

On August 27 the Council of Peoples' Commissars of the Soviet Union announced the fall plowing plan for spring sowings. It calls for an area of 146,000,000 acres as against 104,000,000 acres in 1934, an increase of 42,000,000 acres. Of this total the collectivized farmers are expected to plow nearly 124,000,000 acres, the state farms over 19,000,000 acres, and the individual farmers over 4,000,000 acres. The realization of this program would mean that the decision of the XVII Communist Party Congress to plow in the fall of 1937 half of the sown area in the Soviet Union was actually carried out during the second year of the Second-Five-Year-Plan. But the real significance of the 1935 program lies in the fact that, having added to the specified area the fallow land and that under row-crops, only 12 percent of the total area planted to spring crops would have to be plowed in the spring of 1936. Another feature of the plan is that in a number of southern and southeastern grain regions all the plowing will be done in the fall and none in the spring. In view of the great concern of the government over such crops as cotton and sugar beets, the plan specifies that the entire area for these crops must be plowed in the fall.

The larger the area prepared in the fall, the greater are the chances of raising the yields, and of relieving the pressure during the spring sowing campaign. It is pointed out in this connection that in those regions of the Ukraine where the fields were plowed in the fall, planting was completed in 4 to 6 days. This left ample time to attend to the fallow land, to cultivate the row-crops and to make the necessary preparations for the harvesting season. The Soviet Government is particularly concerned with the eastern agricultural regions which during the last 2 years have failed to keep pace with the progress achieved in the southern agricultural regions. In the fall of 1934 the plowed land in Western Siberia for spring crops was only half as large as that in 1933. The difficulties experienced there during the spring and summer of 1935 are attributed largely to this factor. Hence, the insistence that one of the chief prerequisites toward the improvement of agricultural conditions in Western Siberia is the successful completion of the plowing plan.

Despite the large increase over last year's program, the government does not anticipate any difficulty in the timely completion of the plan. The collective farms are equipped now with a greater number of draft animals and of a better quality than in 1934. But much of the success of the plan will depend upon the proper utilization of the tractors. On August 10 the number of tractors in the machine-tractor stations was increased by 65 percent in comparison with that of last year on a similar date. It is expected that they will plow a total of 67,000,000 acres. In addition to the positive role which better equipment is expected to play during the fall season, the various measures promulgated during the past months, aiming to benefit the collectivized farmers, lead the government to look forward to a fulfillment and a possible over-fulfillment of the 1935 fall plowing plan.

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# BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY a/

Rye production in Germany is generally sufficient for domestic needs, but wheat production usually is not. Germany has a population (1934) of approximately 66,000,000 people and an area of 181,004 square miles. For a number of years, Germany has been striving to attain a self-sufficiency basis in the production of wheat; and, in the bumper crop of 1933, that goal was reached. In the case of wheat, however, the government has recently come to realize that it is neither desirable nor profitable to use the domestic product to the entire exclusion of foreign wheat; accordingly, the production policy now pursued is that of striving toward a greater degree of self-sufficiency in feed grain rather than further increases in bread grains. The German wheat acreage for 1935 is below that of both 1933 and 1934. Production this year is placed below 1933 figures and only slightly larger than in 1934.

Rye production in Germany has always exceeded that of wheat. Since the World War rye production has tended slightly downward, whereas wheat production has tended slightly upward; nevertheless, the former is still nearly double the latter. During the 1928-1933 period, the annual production of wheat averaged approximately 161,000,000 bushels and rye 312,000,000 bushels, whereas during the period 1909-1913 the annual production of those grains averaged 131,000,000 and 368,000,000 bushels, respectively. These figures show that from the 1909-1913 period to the 1928-1933 period rye production has decreased 56,000,000 bushels.

Western Germany is close to ocean transportation by which foreign wheat of superior baking quality is readily obtainable. The principal consuming area of the country is in the west, whereas the principal wheat-producing area is in the east. Because of these conditions, the millers in western Germany in years past have found it more advantageous to import foreign wheat to make up any deficit in local supplies than to transport domestic wheats from surplus areas of the country. As a consequence, imports of foreign wheat into Germany have generally greatly exceeded the quantitative discrepancy between crop production and consumptive requirements. This, in turn, has necessitated the exportation of certain quantities of domestic wheat.

Annual imports during the pre-war period 1909-1913 averaged 91,000,000 bushels and exports 23,000,000 bushels. During the 5-year period 1929-1933, annual imports averaged only 39,000,000 bushels and exports 16,000,000 bushels. The decline shown here in imports is due, in part, to an increase in production of 30,000,000 bushels; in part, to the drastic restrictions which have been placed on imports of foreign wheat during the latter period; and, in part, to a decrease in apparent annual consumption of more than 15,000,000 bushels.

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a/ By J. H. Shollenberger, Grain Specialist, Foreign Agricultural Service, Based on studies made in Germany.

## BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

WHEAT: Acreage, production, yield, trade, and amount available for consumption in Germany, averages 1909-1913, 1924-1933, annual 1929-1935

| Year | Acreage |  |  | Production |  |  | Yield per acre |
|---|---|---|---|---|---|---|---|
|  | Winter | Spring | Total | Winter | Spring | Total |  |
|  | 1,000 acres | 1,000 acres | 1,000 acres | 1,000 bushels | 1,000 bushels | 1,000 bushels | Bushels |
| Average: |  |  |  |  |  |  |  |
| 1909-1913a/ | - | - | 4,029 | - | - | 131,274 | 32.6 |
| 1924-1928.. | 3,600 | 401 | 4,002 | 101,875 | 11,116 | 112,991 | 28.2 |
| 1929-1933.. | 4,435 | 580 | 5,015 | 143,043 | 18,472 | 161,515 | 32.2 |
| Annual: |  |  |  |  |  |  |  |
| 1929....... | 3,632 | 323 | 3,955 | 112,687 | 10,375 | 123,062 | 31.1 |
| 1930....... | 3,997 | 405 | 4,402 | 126,622 | 12,595 | 139,217 | 31.6 |
| 1931....... | 4,653 | 702 | 5,355 | 134,809 | 20,737 | 155,546 | 29.0 |
| 1932....... | 4,882 | 752 | 5,634 | 160,057 | 23,773 | 183,830 | 32.6 |
| 1933....... | 5,011 | 716 | 5,727 | 181,040 | 24,880 | 205,920 | 36.0 |
| 1934....... | 4,668 | 762 | 5,430 | 145,033 | 21,508 | 166,541 | 30.7 |
| 1935....... |  |  | 5,199 |  |  | 171,775 | 33.0 |

| Year | Imports b/ |  | Exports b/ |  | Amount available for consumption c/ |  |
|---|---|---|---|---|---|---|
|  | Wheat | Flour d/ | Wheat | Flour d/ | Total | Per capita |
|  | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | Bushels |
| Average: |  |  |  |  |  |  |
| 1909-1913a/ | 90,539 | 800 | 14,245 | 9,019 | 199,349 | 3.0 |
| 1924-1928.. | 77,731 | 9,594 | 8,043 | 3,090 | 189,183 | 3.0 |
| 1929-1933.. | 38,412 | 630 | 11,547 | 4,086 | 184,924 | 2.9 |
| Annual: |  |  |  |  |  |  |
| 1929....... | 66,213 | 1,745 | 4,182 | 3,021 |  |  |
| 1930....... | 30,346 | 507 | 449 | 376 |  |  |
| 1931....... | 33,778 | 512 | 12,181 | 148 |  |  |
| 1932....... | 33,780 | 269 | 20,885 | 4,405 |  |  |
| 1933....... | 27,944 | 119 | 20,040 | 12,479 |  |  |
| 1934....... | 14,567 | 176 | 1,037 | 2,460 |  |  |
| 1935....... |  |  |  |  |  |  |

Compiled by the Foreign Agricultural Service Division from official records and publications of the International Institute of Agriculture.

a/ Acreage and production figures have been adjusted to correspond with later years but trade figures have not. b/ Year beginning July 1, except 1909-1913, which begin August 1. c/ Stocks at the beginning and end of period disregarded. d/ Flour converted to wheat on basis of 4.5 bushels of grain per barrel of flour.

## BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

RYE: Acreage, production, yield, trade, and amount available for consumption in Germany, averages 1909-1913, 1924-1933, annual 1929-1935

| Year | Acreage | Production | Yield per acre | Imports a/ | Exports a/ | Amount available for consumption b/ | |
|---|---|---|---|---|---|---|---|
| | 1,000 acres | 1,000 bushels | Bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | Bushels |
| Average: | | | | | | | |
| 1909-1913c/ | 12,713 | 368,337 | 29.0 | 16,226 | 43,936 | 340,627 | 5.2 |
| 1924-1928. | 11,383 | 279,940 | 24.6 | 17,220 | 12,483 | 284,677 | 4.5 |
| 1929-1933. | 11,257 | 311,832 | 27.7 | 9,023 | 10,378 | 310,477 | 4.8 |
| Annual: | | | | | | | |
| 1929...... | 11,680 | 321,045 | 27.5 | 5,035 | 20,484 | | |
| 1930...... | 11,641 | 302,312 | 26.0 | 1,233 | 4,518 | | |
| 1931...... | 10,789 | 262,977 | 24.4 | 18,075 | 4,393 | | |
| 1932...... | 10,996 | 329,255 | 29.9 | 15,808 | 6,385 | | |
| 1933...... | 11,179 | 343,570 | 30.7 | 4,964 | 16,112 | | |
| 1934...... | 11,097 | 299,496 | 27.0 | 9,444 | 497 | | |
| 1935...... | 11,199 | 297,188 | 26.5 | | | | |

Compiled by the Foreign Agricultural Service Division from official records and publications of the International Institute of Agriculture.
a/ Year beginning July 1; flour included, converted on the basis of 6 bushels of grain per barrel of flour. b/ Stocks at beginning and end of period disregarded.
c/ Agreage and production figures have been adjusted to correspond with later years, but trade figures have not.

During the period 1909-1913 consumption of wheat averaged 199,000,000 bushels and that of rye 341,000,000 bushels. During the period 1929-1933 annual consumption of these grains averaged 185,000,000 and 310,000,000 bushels, respectively. Thus, wheat consumption decreased by 14,000,000 bushels and rye consumption by 31,000,000 bushels. On a per capita basis, consumption of wheat declined from 3.0 bushels in 1909-1913 to 2.9 bushels in 1929-1933 and that of rye from 5.2 bushels to 4.8 bushels.

Just what significance there is to the decline in consumption of both wheat and rye and to the fact that the decline in the case of rye was appreciably greater than in the case of wheat is not entirely clear. Wheat is used almost wholly for the production of flour for human consumption, whereas a considerable quantity of rye is used for animal feed. The principal use of both of these grains is in the production of flour for human consumption. Some wheat and rye is used for animal and poultry feed, but wheat to a much lesser extent than rye. According to data published by the Institut für Landwirtschaftliche Marktforschung (see table, page 427), wheat utilization for human consumption in recent years

BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

has been losing some of its importance in relation to rye. Formerly wheat was believed to be gaining in importance as a human food, but this trend was arrested and reversed by conditions brought about by the depression.

The decreased purchasing power of the people, unemployment of large numbers, and drastic restrictions on foreign wheat importation, resulting in lowering the quality of the bread and rolls produced in Germany, no doubt have been responsible for much of the decline. Should prosperous times return and import restrictions be greatly reduced or removed, it is probable that the utilization of wheat as a human food would again increase in importance relative to rye.

GERMANY: Estimated consumption of grain according to utilization purposes
Estimates given in 1,000 metric tons basis grain equivalent

| Type of grain and utilization | 1924-25 | 1925-26 | 1926-27 | 1927-28 | 1928-29 | 1929-30 | 1930-31 | 1931-32 | 1932-33 |
|---|---|---|---|---|---|---|---|---|---|
| Human consumptive purposes: | | | | | | | | | |
| Wheat............. | 4,500 | 4,600 | 4,800 | 5,100 | 5,150 | 4,900 | 4,300 | 4,100 | 4,000 |
| Rye............... | 5,000 | 5,100 | 5,000 | 4,800 | 4,650 | 4,800 | 5,100 | 4,900 | 4,900 |
| Other grains...... | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 | 225 |
| Total all grains | 9,725 | 9,925 | 10,025 | 10,125 | 10,025 | 9,925 | 9,625 | 9,225 | 9,125 |
| Industrial purposes a/: | | | | | | | | | |
| Barley............ | 1,037 | 1,207 | 1,263 | 1,340 | 1,415 | 1,426 | 1,125 | 837 | 750 |
| Other grains...... | 160 | 125 | 280 | 305 | 200 | 165 | 155 | 130 | 100 |
| Total all grains | 1,197 | 1,332 | 1,543 | 1,645 | 1,615 | 1,591 | 1,280 | 967 | 850 |
| Feeding purposes b/: | | | | | | | | | |
| Oats.............. | 5,750 | 5,500 | 6,150 | 5,900 | 5,500 | 5,950 | 5,450 | 5,600 | 5,825 |
| Barley............ | 1,800 | 2,250 | 3,100 | 3,000 | 2,800 | 3,150 | 2,400 | 2,400 | 1,825 |
| Rye............... | 800 | 2,100 | 1,500 | 1,700 | 1,550 | 1,700 | 2,350 | 1,600 | 2,525 |
| Maize............. | 475 | 375 | 1,475 | 1,450 | 700 | 650 | 450 | 700 | 150 |
| Wheat............. | 150 | 150 | 150 | 350 | 300 | 150 | 150 | 350 | 675 |
| Mixed grain....... | 450 | 450 | 400 | 500 | 550 | 600 | 500 | 550 | 600 |
| Mill offals c/.... | 1,900 | 2,100 | 2,400 | 2,500 | 2,350 | 2,300 | 2,250 | 1,950 | 1,850 |
| Potatoes b/....... | 3,550 | 4,650 | 2,200 | 3,800 | 4,550 | 4,200 | 5,100 | 4,450 | 4,450 |
| Total feed (grain offals and potatoes) | 14,875 | 17,575 | 17,375 | 19,200 | 18,300 | 18,700 | 18,650 | 17,600 | 17,900 |

"Blätter für Landwirtschaftliche Marktforschung," Jahrgang 3, Monatsschrift des Instituts für Landwirtschaftliche Marktforschung, 1932, page 138.

a/ Chiefly for brewing and distillation purposes. b/ Grain equivalent: 400 kilograms potatoes equals 100 kilograms grain. c/ Including rice offals. Grain equivalent: 133 kilograms mill offals equal 100 kilograms grain.

## BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

### Characteristics and quality of domestic wheats

Climatic conditions are well suited to the production of wheat and rye in Germany, but artificial fertilization is essential to satisfactory crop results. From 85 to 90 percent of the wheats are of winter habit. Practically all are of the common species (triticum vulgare). Some spelt, emmer, and einkorn are grown, but the total production of these species of wheat is relatively small (4,895,523 bushels produced in 1931-32). No durum wheat is produced. Some of the winter wheats are white in color, but most of them are red. The spring wheats are only of red color.

Most of the wheat produced is of soft texture and comparatively weak quality. This is particularly true of the winter wheats. Many of these soft wheats are comparable in quality to United States red winter wheats, but owing to the fact that they are usually of much higher moisture content, they are less valuable for milling purposes. A small percentage of the wheats is of semi-hard or hard texture, but the quantity produced is not sufficient to fill the demands of the domestic trade for wheats of this type. On the other hand, Germany's production of soft wheats is more than sufficient; consequently, the foreign wheats most suitable for import requirements are of the strong, hard type.

According to the statement of a German miller of considerable prominence and experience, German wheats prior to 1900 were of satisfactory quality. At about that time, owing to the poor yielding propensities of the domestic wheats, the high yeilding but poor quality French Brodeaux and English Squarehead varieties were introduced and gradually replaced the old German wheats. Since then, except within the last few years, these introductions have been the predominating variety types produced, which fact accounts for the weak quality of German wheats in recent years.

Shortly after the World War a number of Swedish varieties were introduced into northern Germany, but these, too, in most instances fell short of fulfilling all the requirements demanded of German wheats. In recent years, however, much work has been done by domestic wheat breeders in the direction of variety improvement so that now Germany has a number of varieties which give promise of being satisfactory. In developing new varieties, the aim has been to provide wheats of good quality as well as of good yielding tendencies. One requirement demanded in connection with yielding tendencies is that of resistance to winter killing. This, of course, only applies to winter wheat varieties. A number of authorities state that much progress has been made in accomplishing these aims but that the most marked progress made in quality improvement has been in connection with spring wheats.

In some instances, variety improvement has been accomplished by the elimination of inferior varieties and in other instances, by the development of new varieties of superior quality. One authority has stated that, whereas formerly there were more than 250 varieties grown, there are now only about 70 grown. Dr. Pelshenke of the Institute for Plant Cultivation and Breeding at the University of Halle, which is the only official institute of the national government for plant breeding work, presents data in an official bulletin indicating that, in 1932, 13 varieties constituted 68.6 percent of the total production of winter wheat and 7 varieties 93.3 percent of the production of spring wheat. He further states that, of the 13 winter-wheat varieties, the following are of fairly good quality with regard to gluten content and gluten quality: Rimpaus (formerly Bast), Krafft's Siegerländer, and Ackermann's Bayernkoenig. The outstanding quality varieties of spring wheat he gives as being Janetzkis and Heines Kolben.

Although the institution mentioned in the preceding paragraph is the only one of its kind supported by the national government, there are a number of other institutions throughout the country doing plant-breeding work, all of which, except one located at Weihenstephan, Bavaria, are private institutions. The one at Weihenstephan is supported by the State of Bavaria and works only in the interests of Bavarian agriculture. The fact that Germany grants patent rights to originators of new varieties makes the development of new varieties a profitable enterprise and is an added inducement for private institutions and individuals to engage in plant-breeding work.

## Specific quality characteristics

The moisture content of German wheats is usually relatively high. In wet seasons, it is seldom less than 16 percent and is often 18 percent or higher. Even in seasons of comparative dryness, it seldom is lower than 14 percent. Wet seasons are the general rule. The 1932, 1933, and 1934, seasons, however, were exceptions to this rule.

In ordinary years, because of high moisture content, there is usually a fairly high percentage of germinated wheat kernels, a development which has a very marked unfavorable influence on the milling and baking properties of domestic wheats. This form of damage is of widespread occurrence in ordinary years and is the form of damage of greatest prevalence in threshed grain. Its occurrence in the 1932 and 1933 crops, however, was of negligible importance, owing to the fact that in most instances the grain was harvested under dry conditions. In this connection it might be added that, because of the hand methods of harvesting, the cheapness of hand labor, and, in most instances, the smallness of the individual farms, grain crops may be harvested in Germany and other European countries without material loss in quantity or deterioration in quality under weather conditions that would be ruinous if encountered in the United States.

Damaged kernels, other than those caused by germination, are not usually present in German wheats to any appreciable extent, except those

BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

resulting from Hessian fly and rust infestations. Kernels damaged from these infestations, however, are not generally classed as "damaged". The only effect of this form of damage on the kernel is a lowering of its specific weight.

Damage resulting from weevil infestation is of rather uncommon occurrence. Stinking smut sometimes occurs; but, because of the consistent use of control methods for its prevention, it is seldom present to any appreciable extent.

The foreign material content of German wheats is relatively low. Weed seeds are sometimes present, but seldon is the quantity high enough to be of any consequence. The wheat is also free from stones and dirt, and fairly free from rye admixtures. This is not true of the wheat produced in some European countries. Apparently German farmers exercise considerable care in keeping these two grains separate.

In specific weight (test weight), there is about the same variation as in United States wheats grown east of the Mississippi River. In Germany and other continental European countries, specific weights are given in terms of kilograms per hectoliter. Specific weight is the factor which is most generally used as the basis for the evaluation of German wheats. It is said that the German wheat trade considers 72 kilograms per hectoliter the lowest weight limit for wheat for use in the production of flour. On the basis of experiments conducted by the writer, the approximate equivalent of this weight in pounds per Winchester bushel by the United States official method of test, is 55.7.

In protein content, German wheats range from extremely low to moderately high. Their average protein content is somewhere in the neighborhood of 10 percent (basis 13.5 percent $H_2O$). According to investigations made by Dr. Pelshenke at the Halle University on the wheat crops of 1931-1934, the 1934 wheats were decidedly higher in protein content than were those of the 1931,1932, and 1933 crops. In reporting this investigation, Dr. Pelshenke states that the samples used in his tests were gathered from all over the country according to yield, and that they were without exception average samples taken from field crops and not from crops grown for experimental purposes. The number of samples from each crop used in his investigation is reported as being 3,000. It is believed that the data obtained give a fairly accurate indication of the protein content of German wheats. These data are presented in the table on page 431, and show the percentage of samples within certain protein-content ranges. A much higher percentage of the 1933 and 1934 crop samples was in the high-protein-content group than of the 1932 and 1931 crop samples.

BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

GERMANY: Percentage of samples of wheat according to various protein contents - crops of 1931, 1932, 1933, and 1934

| Range in protein content a/ N.X 5.7 (Basis 13.5 percent $H_2O$) | Crop 1931 | Crop 1932 | Crop 1933 | Crop 1934 |
|---|---|---|---|---|
| | Percent | Percent | Percent | Percent |
| Under 8.6 percent.......... | 6.1 | 20.4 | 9.0 | 7.3 |
| 8.6 to 10.3 percent........ | 58.6 | 55.5 | 44.0 | 32.2 |
| 10.4 to 11.2 percent....... | 22.2 | 15.7 | 21.9 | 14.4 |
| Over 11.2 percent.......... | 13.3 | 8.4 | 24.4 | 46.1 |

"Das Muehlenlaboratorium" Beilage zur Wochenschrift, "Die Muehle," 1932 and 1933.

a/ In the original text the protein-content ranges are presented on a moisture-free basis.

## History of German grain tariffs

The history of a protectionist grain policy in Germany dates back to the middle of the last century. Although at that time Germany produced more bread grain than was needed for domestic consumption, import duties were imposed on imports of grain. Shortly after the middle of the century, owing to the industrial development that was taking place, Germany began to favor free trade, with the result that by 1865 all the import duties on grain had been removed. In the years that followed, Germany changed from a surplus grain-producing country to a deficit country. In 1879, however, owing to the increasing competition of Western Hemisphere grain, which was making the production of domestic grain very unprofitable, the import duties on grain and flour were re-imposed, and except for a short period in the nineties, this policy continued until the World War.

During the war, tariff protection was displaced by more drastic forms of trade control. As a war-time measure, all foreign commerce was subjected to direct administrative control. At the end of the war the Versailles Treaty deprived Germany of freedom of action in imposing tariffs; consequently, in order to control the importation of flour and grain a system of import and export licensing was adopted. The Versailles Treaty restrictions ended in 1925 and in October of that year Germany supplanted the system of import and export licensing with a tariff system, which during the years 1925 to 1929 was only moderately protectionist but since the end of 1929 has been very restrictive.

The grain measures adopted since 1929 have had the twofold object of aiding the domestic producers and of attaining a self-sufficiency production basis. Some of these measures have taken the form of import duties and restrictions; some of price stabilization, price fixing, and crop financing, some of milling and baking regulations, and finally, of a virtual control of marketing and milling.

## BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

### Grain handling and milling practices

The principal German seaports are equipped with modern facilities for discharging grain from ocean-going vessels. The storage facilities at discharging points, however, are not so modern. Warehouses and barges supply most of the available storage space for imported grain. Only a relatively small amount of storage space of the silo type is available for public use. Most of the grain storage space at the more important commercial mills, however, is of the silo type.

Germany has a very fine system of waterways, extending over a large portion of the country. The barges operating on these rivers and canals provide a cheap means of transportation for mills so situated as to take advantage of this form of transportation. Most of the more important commercial mills of the country are located on waterways. At such mills barge transportation is used freely. The barges used have a carrying capacity ranging from 200 to 1,000 metric tons, (7,000 to 37,000 bushels of wheat), but most of them are between 200 and 300 metric tons capacity (7,000 to 11,000 bushels of wheat).

### Number and classification of mills

There are many small grain mills in Germany, most of which are of the windmill type. Practically all of these small mills grind only feed or whole meal flours. Their equipment in most instances is of a crude or antiquated sort, incapable of producing flour fit for human consumption. There are, however, a considerable number of larger mills very modernly and completely equipped, which are capable of producing flour of the best grade. These produce practically all of the flour used for human consumption.

As in the case of other countries, the small mills in Germany have been gradually disappearing. According to published data, there were 59,908 grain mills in Germany in 1875. By 1927-28, the latest year for which statistics are available, the number of mills had decreased to 23,637. Of this latter number, 17,649 had a daily grain-grinding capacity of less than 5 metric tons (184 bushels of wheat). Practically all of the mills of this capacity are antiquated outfits, operating exclusively as feed mills. A great majority of them are windmills.

The modern equipped mills are of larger size. These are not so widely distributed but are located at points where cheap transportation is available, chiefly at seaports and on the rivers and canals leading thereto. The greatest milling center is at Mannheim on the Rhine, and the second greatest at Hamburg. Formerly these seaport and river mills milled almost entirely foreign cereals, but in recent years, owing to government restrictions and regulations regarding the importation and milling of foreign grains, this is no longer possible. The change has resulted in a material

## BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

reduction in production at these mills but has tended to increase production at inland mills.

Certain millers interviewed by the writer stated that the full-time milling capacity of Germany is 60 percent higher than actual domestic requirements. Since the war, a concentration movement has taken place in the milling industry of Germany which has resulted, on the one hand, in the consolidation of some of the milling enterprises into large milling companies and, on the other hand, in the grouping of milling enterprises into cartels. The purpose of this movement was to reestablish the milling industry on a profitable basis for doing business through the regulation of production, prices, and delivery terms. The culmination of the concentration movement has been effected by the recent action of the government in putting the entire milling industry under strict government regulation and control.

### Mill production

Complete reliable statistics of German mill production are not available for any year more recent than 1927-28. Since that time many significant economic and political changes have taken place, which undoubtedly have materially affected annual mill production. The 1927-28 statistics, therefore, cannot be considered as being truly representative of present production; nevertheless, they are of historical value and should be useful to some extent at least in guaging present production. These data are presented in the following tables and are discussed in the following paragraphs.

GERMANY: Grain processed by mills during the crop year 1927-28

| Product | Processed grain | | |
|---|---|---|---|
| | Domestic | Foreign | Total |
| | Metric tons | Metric tons | Metric tons |
| Rye.............. | 4,123 | 542 | 4,666 |
| Wheat............ | 2,442 | 2,642 | 5,085 |
| Barley........... | 433 | 986 | 1,419 |
| Oats............. | 260 | 47 | 307 |
| Maize............ | – | 479 | 479 |
| Mixed grain....... | 637 | 23 | 661 |
| Other agricultural products........ | 3.3 | 12.8 | 16.3 |
| Total.......... | 7,898.3 | 4,731.8 | 12,633.3 |

"Industrielle Produktion, Sammlung Produktionsstatistischer Ergebnisse bis zum Jahre 1930," published by the German Statistical Bureau in "Sonderhefte zu Wirtschaft und Statistik," 1931, page 161.

## BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

GERMANY: Production of mill products by commercial mills, grist mills, and other mills during the crop year 1927-28

| Milling products | Produced in | | | |
|---|---|---|---|---|
| | Commercial mills | Grist mills | Other mills | Total |
| | Metric tons | Metric tons | Metric tons | Metric tons |
| Rye flour | 1,797,000 | 899,400 | 80,600 | 2,777,000 |
| Rye meal | 198,700 | 132,600 | 17,000 | 348,300 |
| Wheat flour | 3,079,300 | 364,300 | 13,600 | 3,457,200 |
| Soft wheat grits or semolina | 88,400 | 500 | - | 88,900 |
| Hard wheat grits or semolina | 93,500 | 100 | - | 93,600 |
| Wheat meal | 3,700 | 4,700 | 300 | 8,700 |
| Barley flour | 4,000 | 6,700 | 100 | 10,800 |
| Oats products | 34,900 | 1,000 | - | 35,900 |
| Corn flour | 1,700 | 100 | 300 | 2,100 |
| Flour made from mixed grain | 7,100 | 20,500 | 400 | 28,000 |
| Groats and grits made from barley | 39,300 | 1,300 | - | 40,600 |
| Fodder meal | 1,411,200 | 1,437,800 | 1,000 | 2,850,000 |
| Feeding flour, bran and other wastes | 1,989,800 | 573,200 | 41,500 | 2,604,500 |
| Other milling products | 10,200 | 800 | 1,200 | 12,200 |
| Total | 8,758,800 | 3,443,000 | 156,000 | 12,357,800 |

"Industrielle Produktion, Sammlung Produktionsstatistischer Ergebnisse bis zum Jahre 1930," published by the German Statistical Bureau in "Sonderhefte zu Wirtschaft und Statistik," 1931, page 161.

The total quantity of wheat processed by all mills in the crop year 1927-28 was 5,085,000 metric tons (186,840,000 bushels) of which 2,642,000 metric tons (97,076,000 bushels) were foreign wheat. The total quantity of rye processed was 4,665,000 metric tons (183,651,000 bushels) of which 543,000 metric tons (21,377,000 bushels) were foreign grain. Commercial mills processed 88 percent of the wheat but only 64 percent of the rye, whereas grist mills and mills for other purposes processed 12 percent of the wheat and 36 percent of the rye. Of the foreign wheat and rye processed, the commercial mills accounted for more than 99 percent of the former and approximately 95 percent of the latter. According to data obtained from the same source as that of the tabular data referred to above, 62 percent of the wheat was processed by mills of 80 tons or more daily grinding capacity and 8 percent by mills of under 5 tons capacity. On the other hand, of the total quantity of rye processed, only 19 percent was processed by mills of 80 tons (3,000 bushels) or more daily grinding capacity and 22 percent by mills of under 5 tons (200 bushels) capacity. In connection with the data in the table above, it is interesting to note that in 1927-28 wheat-flour production exceeded rye-flour production by a wide margin.

## BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

### Wheat milling practices

### Equipment and technique

It has been pointed out in a previous paragraph that 62 percent of the wheat flour produced in Germany is produced by mills of 80 metric tons or more daily grain grinding capacity; (80 metric tons of wheat are equivalent to approximately 700 barrels of flour, conversion basis 4 1/2 bushels = 1 barrel). These mills and some of even smaller capacity are of modern type and well equipped. Most of them maintain chemical laboratories for mill control and experimental purposes.

Some of the mill laboratories are of a crude sort, capable of making only the simplest tests. Some however, are very completely equipped, but as a general rule German mill laboratories are not so well equipped as those in America. The work done in these laboratories is of a nature similar to that done in American mill laboratories except that more attention is devoted to the study of wheat conditioning and flour quality improvement problems and less attention is given to routine chemical determinations. These latter are not so important as in American milling for the reason that the German baker is not so much concerned about the chemical composition of the flour he buys as is the American baker. The German baker is in the habit of buying several different qualities of flour and, by cut-and-dried methods of procedure, making up a blend that is suitable for his requirements.

The routine testing for protein content is practiced only at a very few mills, but all mills make gluten tests. Ash content is considered of importance chiefly as a check on milling efficiency.

The grain-cleaning equipment at these mills includes all the ordinary types of machines and many special machines. Washers, conditioners, cockle cylinders, spiral separators, stoners, and oat separators are used in practically all mills that are accustomed to grinding foreign wheat. Many of the mills are equipped with the disc type of separators. The type or kind of foreign material most objectionable to German millers is hard smut balls. They have little difficulty in removing other types of foreign matter; nevertheless, objection is made if the wheat contains any considerable percentage of foreign matter, no matter what type it is. The screenings separated from the wheat in the cleaning process are, as a general rule, ground and mixed with the bran and shorts. There is no German law regulating the proportion of such material that may be added to wheat offals; but, if the proportion is high, the resultant product does not find ready sale.

In preparing wheat for grinding, the foreign wheats are usually washed and conditioned apart from the domestic wheats, but not all of the latter are washed. The washing and subsequent conditioning is usually regulated in such a manner that the moisture content of the wheat when it leaves the conditioner will be suitable for grinding. The moisture content at which wheat is ground in German mills ranges from 14 1/2 to 16 percent.

The grinding operations in the larger German mills usually include from 6 to 7 breaks, 2 to 4 sizings, and 8 to 15 reductions. In some of the mills, stone buhrs are used for the reduction of certain tailings stocks. High grinding is practiced on the break rolls and close grinding on the reduction rolls. The amount of breaking surface used constitutes a relatively high proportion of the total grinding surface. In most mills, after each reduction disintegrators or pulverizers are used for breaking the flaky material resulting from the reduction operation. The linear grinding surface used by the bigger mills is about 2 1/3 inches per barrel of flour grinding capacity. The bolting or sifting operations are done almost exclusively on sifters. Reels are seldom used except for rebolting or flour-blending purposes. Purifiers are used and are considered important in the grading and purification of middlings stock for subsequent reduction into flour.

## Flour extractions and grades

In German mills flour extractions are generally quite long, ranging from 73 to 76 percent. The principal reason for this is that mill-offal prices are relatively low in comparison with wheat prices. Another reason is that the low grade flours resulting from long extractions are useful for blending with rye flour. Three grades of flour are generally made. The first and best grade is a patent flour consisting of that portion of the extraction from 0 percent up to 30 to 40 percent. This is used for pastries and for luxury rolls, and to some extent as a household flour. The second grade is called "Backermehl" and corresponds to the "Bakers" or "Clear Flour" in American mills. It consists of that portion of the extraction beginning at 30 to 40 percent and ending at 65 to 68 percent. It is used for the production of rolls and bread for the cheaper class of trade and is sometimes mixed with patent. The third grade of flour is called "Brotmehl" and is the tail end of the extraction. It is used for mixing with rye flours but not with patent grades of rye flour. "Straight" grade flours are also made but usually only from 100-percent domestic wheat mixtures. The foregoing are the regular grades produced, but besides these certain special flours are produced. In several of the mills visited, a very granular, short-patent flour was being made, which was said to be a special pastry flour.

One miller, who was grinding two mixtures, the one consisting of 75-percent domestic, 21-percent Manitoba, and 4-percent Bahia Blanca wheat, and the other of 100-percent domestic wheat, gave the following ash contents as representative of flours of various degrees of extraction milled at his mill:

## BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

| | Ash content (basis 13.5 percent moisture)<br>Percent |
|---|---|
| Extraction beginning at 0 percent and ending at 30 percent | 0.41 |
| Extraction beginning at 9 percent and ending at 68 percent | .52 |
| Extraction beginning at 20 percent and ending at 73 percent | .59 |
| Extraction beginning at 25 percent and ending at 75 percent | .64 |
| Extraction beginning at 30 percent and ending at 60 percent | .72 |
| Extraction beginning at 68 percent and ending at 72 percent | 1.14 |
| Extraction beginning at 73 percent and ending at 76 1/2 percent | 2.16 |
| Extraction beginning at 0 percent and ending at 72 percent (a "Straight" flour from domestic wheat) | .54 |

The ash contents shown above for the better grades of flour are relatively high as compared with those of American flours of similar degree of extraction. One explanation of this is that, at least until quite recently, ash content was not used as a marketing factor; consequently, German millers may not have been so particular about their separations in the production of their high grade flours. Another plausable explanation, offered by a European milling engineer of wide experience, is that European wheats are generally of higher ash content than those grown in the newer parts of the world.

Different sections of Germany require different types and qualities of flour. Strong quality, high-grade flours are demanded in western Germany as far south as Baden-Baden and in some southern sections. These are the chief wheat bread eating districts of the country. Some cheaper-grade flours are also required in these districts. In other parts of the country, where rye breads are more generally used, the demand for high-quality flours is not so pronounced. In Dresden a very strong gluten flour is demanded for the production of a special type of round biscuit or bun of thin crust that breaks easily and is flaky like a dried gluten ball. This product was formerly a specialty of Vienna.

## Bleaching and flour improvement practices

It is generally conceded that German wheats are deficient in some of the properties or characteristics essential to the production of the quality of flour desired by the German baking trade. This deficiency can be corrected by the addition of 30 to 40 percent of strong foreign wheats, and in former years this was the procedure generally followed. Recent government milling regulations and import restrictions, however, have made it impossible for the millers to mix the requisite proportion of foreign wheats in their milling mixture to give the desired quality to their flour product; consequently, they have had to seek other means that would assist them in the production of a satisfactory flour. Much experimenting has been done to discover some chemical treatment that will improve the quality of the domestic flour, and a number of methods have been adopted which give beneficial results.

Some of these methods consist in treating the flour with a gas and others in the addition of chemical salts. In the gas treatment the Agene (Nitrogen Triclorid) and Electrical (Nitrogen Peroxide) methods are principally used. In the treatments in which chemical salts are employed as the improving agent, the principal salts used are potassium bromate, ammonium persulphate, and benzol peroxide (Novadelox method). Approximately three fourths of all the wheat flour milled in Germany is chemically treated, and even most of the rye flour milled is given a bleaching treatment and a small proportion of it is treated for quality improvement.

The benefits to be derived from each of the treatment methods here mentioned differ somewhat; consequently, many of the mills use two or more methods of treatment. The bromate treatment is supposed to toughen the gluten and is especially useful in connection with weak wheat. It is probably the most widely used method. The ammonium persulphate method is supposed to generate gas in the dough during baking and thereby increase loaf volume. This method is often used in combination with the bromate method. The Electrical and Benzol Peroxide (Novadelox) methods are used chiefly for their bleaching effect. It is said that the Agene method (an American method) is well liked, both for its bleaching effect and for its improving effect.

Certain other methods or treatments also are employed. Some of these have to do with wheat conditioning and some with baking procedure. The latter refer to the use of malt extracts by bakers. During the last few years, certain of the improving methods used have been attacked on the ground that they are harmful to the public health and some attempt has been made to get the government to prohibit their use. No definite proof of the harmful effects, however, has yet been presented and thus far the government has taken no action.

## Wheat mixing practices

The German baking trade generally demands a flour of good gassing power, quick dough development propensities, and elastic gluten quality, but it need not be of long fermentation tolerance. Domestic wheats have the requisite gassing and dough developing properties but are deficient in the other requirements. To offset these deficiencies it has been the practice in years past, especially among the larger mills, to blend certain percentages of foreign wheats in their milling mixtures. So long as millers were permitted to import, duty free, as much foreign wheat as they pleased, almost any medium or high quality foreign wheat could be used to a certain extent. Milling mixtures, however, had to contain some of the better wheats but could contain some of the weaker, medium-quality wheats as well.

Under such conditions German milling mixtures usually contained from 40 to 70 percent of foreign wheat and in some instances consisted entirely of foreign wheat. In making up such mixtures, price was an important consideration. Cheap foreign wheats of medium quality were used quite liberally and the high-quality, more expensive wheats used sparingly. Canadian, Russian, United States, Danubian and Argentine wheats were the foreign wheats used for these mixtures. Canadian Manitoba wheats were considered the best in quality and the Russian and United States Hard Winter second best in quality. Danubian and Argentine wheats were used principally as "fillers" in mixtures in which some of the higher quality foreign wheats were present. No low-grade foreign wheats, which in some European countries are required in milling mixtures because of their high gassing properties and high diastatic activity, are needed in Germany.

The drastic restrictions imposed on the importation of foreign wheat since 1931 have made it necessary for German millers to require that a high proportion of the foreign wheat used be of the highest quality obtainable. Some Hard Winter and the better types of Argentine wheats can be used in mixtures which contain 30 percent of foreign wheat, but the greater proportion of the foreign wheat used must be of a quality equal to No. 1 Manitoba. Actually, however, in recent years very few German mills have been able to use as much as 30 percent of foreign wheat. The regulations and restrictions with which importers have to contend make the importing of grain such a difficult and troublesome procedure that most millers limit themselves to the use of the fewer number of types and the smallest quantity of foreign wheat that will satisfy their needs. This can be accomplished by using only the very highest quality wheats obtainable. No. 1 Manitoba Hard is being demanded almost to the entire exclusion of all other foreign wheats. In demanding the best wheat obtainable, price is of relatively little importance to the German miller.

A number of millers interviewed by the writer complained of the quality of the Hard Winter wheat purchased by the government from the United States Farm Board in 1931. On the other hand, some millers reported that it was of satisfactory quality. The complaints made varied somewhat and included such expressions as "inferior in quality to previous purchases," "dirt," "old," and "unnatural odor." One complaint was that this wheat produced a reddish-colored flour.

One miller interviewed by the writer was of the opinion that United States Hard Winter wheats were worth 20 percent less than Manitoba wheats.

## BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

Another said that, from the standpoint of effect on quality, 10 percent of Manitoba in their milling mixtures was equivalent to 15 percent of Hard Winter, whereas still another was of the opinion that 30 percent of Manitoba was equivalent to 40 percent of Hard Winter. Some millers prefer special types of Plate wheats to Hard Winter. United States Northern Spring wheats are rated by German millers as being among the world's best-quality wheats.

"Federal" Amber Durum and No. 2 Amber Durum wheats are well liked for the production of semolina, but some Plate and Hard Winter wheats also have been used for this purpose.

### Rye Milling practices

Rye milling in Germany is as important an industry as wheat milling and has been developed to the same high state of efficiency. Much of the equipment used is the same in both industries, but there are certain types of equipment necessary to the one which are not necessary to the other. Moreover, there are certain essential differences in processing or milling methods that make it impracticable to use the same mill for both purposes, and in only a few instances is this attempted.

### Equipment and milling technique

When received at the mill the rye is given a rough cleaning over a receiving separator before it goes to the storage bins. The binning is done in accordance with some scheme of classification which usually takes into account only such factors as condition and natural weight. The chemical constituents of rye are not so important as in the case of wheat, although for certain purposes some distinction is made regarding quality characteristics. For example, Plate rye is considered of superior quality to domestic and Canadian rye for the milling of coarse rye meal (called Roggenschrot) used in Schwarzbrot. Its low moisture and starch contents make it suitable for this purpose. Canadian rye also has a low moisture content but not a low starch content and, therefore, is not so suitable for this purpose as Plate rye. (The moisture content of these two ryes is generally about 13 percent, whereas that of domestic rye is from 16 to 19 percent). In making up this grist for milling purposes, the rye miller makes some attempt to maintain a uniform mixture, but in doing so condition and natural weight are the factors chiefly considered.

In the milling operation it is often the practice to flatten the kernels before beginning the breaking. This flattening is done by means of rolls. No separation of stock is made after this operation, but the flattened kernels pass directly to the first break rolls. It is considered of particular importance that the first break rolls have a large amount of grinding surface so as to produce a relatively high percentage of flour at this point in the process. The number of breaks used is about 7

BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

in the larger mills. The reduction operations are not so numerous as in wheat milling. They are usually done on smooth rolls. In some of the mills, stone buhrs are used for the coarse middlings reductions. Pulverizers or disintegrators for breaking up the flaky material are usually used after each reduction operation before the reduced stock goes to the sifter.

No purifiers are used in rye milling. As a general rule, the grading of the ground material for subsequent grinding and the separation of the flour are done by means of sifters of the plansifter type. Reels are sometimes used at the end of the process, but in many of the rye mills all separations are made on sifters. Bleaching is practiced in practically all of the rye mills, and in a few the practice of adding chemicals for flour-quality improvement purposes is also followed.

Flour grades and extractions

Before the war, the rye flours produced in Germany for domestic use were of three so-called extractions; i.e., 60 percent, 65 percent, and 70 percent. At that time the 70-percent-extraction flour was in greatest demand and the 60 percent in least demand. Since the war, however, there has been a tendency toward whiter and better quality rye flours with the result that the 60- percent-extraction grade is now in greatest demand, and an additional grade has made its appearance; i.e., a patent grade of 35- to 45-percent extraction. Although the demand for this latter grade is not great, the fact that it is being produced even in small quantities has some significance. The tendency toward the better grades of flour here shown in the case of the domestic trade also holds true for the export trade except that for the latter the grades dealt in are fewer in number.

The grades mentioned in the preceding paragraph do not mean exactly what their names imply. The extraction percentages indicated by them are in reality only designations for certain qualities which are generally accepted as being associated with such extractions and may or may not represent the true extraction percentages. In producing these various grades, the miller strives to produce as high a proportion of the desired quality of flour as he possibly can, regardless of the extraction percentage of the grade; consequently, the actual extraction percentage of the particular grade produced is in many instances somewhat higher than the indicated grade percentage. Moreover, the miller does not limit his extraction to the quality of any of the so-called grades, but produces as much flour (extractions are usually from 70 to 72 percent) as is consistent with good milling practice; and, if any portion of the resultant product is of a quality unsuitable for the particular grade of flour desired, such portion is separated as a Low-Grade flour.

Some of the Low-Grade rye flours produced are sold to bakers for use in their dark rye breads, and some the miller blends either with his shorter extraction flours to make the so-called long-extraction flours or with his dark and whole grain rye flours of the type used for making black bread and pumpernickel. The quantity that can be used in this manner, however, is small and is dependent to a considerable extent on its quality.

In connection with the aforementioned practices regarding extractions, it should be borne in mind that the extraction percentage obtained is to some extent dependent on the quality and condition of the rye used and upon the individual efficiency of the miller.

Prior to the war, rye flour was milled to an average extraction of approximately 70 percent. Due to improved milling technique, rye-flour extraction since the war (except for the period 1931-32, in which government regulations prescribed the percentage of extraction) have increased from 1 to 2 percent. Coincident with this increase in extraction percentage, there has been a demand tendency toward better quality rye flour.

Formerly rye flour was marketed on an extraction percentage basis, but no specifications were prescribed whereby the buyer could be assured that he was getting flour of the designated extraction percentage. In Berlin, however, beginning September 1, 1933, official specifications were put into effect that prescribed the ash-content limitations for the various market types of rye flour.

## Baking practices

### Production and distribution

Bread baking in Germany is done mostly in commercial shops and bakeries. The home baking of bread is confined almost exclusively to the farmer class of people and even among this class it is not so generally practiced as might be imagined because in most sections of Germany farmers live in villages and are able to obtain bread very conveniently and cheaply from the village bake shop. The city housewife seldom, if ever, bakes her own bread.

The use of flour in the home, except as noted above, is generally limited to the making of gravies and special dishes, and of baked goods that either must be served hot or are not obtainable from the commercial bakeries. The art of cake baking is not very highly developed among German housewives. Pies are unknown. Tarts and other forms of pastries are made, however, but only sparingly. Such products are luxuries, which only comparatively few people can afford. In most instances cooking facilities in the home are of a meager sort and unsuitable for fancy baking.

## BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

In many of the farm villages there are community ovens for baking bread, which the farmer women take turns in using. Each housewife bakes about once a month, using a special yeast culture which is preserved in some form of leaven from one baking to the next. The loaves baked by the farmer women vary from two to five kilos in size. These loaves are baked very slowly - from 2-1/2 to 3 hours.

As a general rule the farmer obtains his flour from the nearest mill. He takes a few bags of grain to the miller, who either grinds it for him or gives him other flour in exchange. Small mills are very numerous and are widely distributed in Germany, whereas the medium- and large-sized mills are relatively few in number and widely separated. Because of its convenience of location, the small mill gets the greater share of this class of trade.

Commercial bakeries are of two types, the modern factory type and the shop type. The factory type is found only in the cities. On the other hand, the shop type is found everywhere, in villages and in every section of the cities.

The factory type of bakery employs modern machine methods of production as do American bakeries. The use of machinery in the shop type of bakery is, however, limited ordinarily to a machine mixer or kneader and to a divider for roll making. In many of the shops even these operations are done by hand.

The shop bakery is usually more or less a family affair. The operator and his family live on the premises. The male member or members of the family attend to the baking and the female members to the selling. Some delivering is done, but no soliciting. It is an established custom throughout Germany among the middle and upper classes and among many people of the lower class to eat fresh wheat-flour rolls for breakfast every morning except Sunday. In the larger cities these rolls are delivered to the house by the baker or his helpers. These deliveries are usually made by boys or girls on bicycle or afoot. Sometimes a small fee of 10 pfennigs is charged per week for delivery service.

For purposes of distribution of its products, the large or factory-type bakery operates a chain of sales shops throughout the territory it wishes to serve. Trucks or horse-drawn wagons are used to transport the baked goods from the bakery to these sales shops, which, from the sales and delivery standpoint, are operated in a similar manner to the shop-type bakery. The large bakeries also supply many of the small bakeries with staple types of baked goods, particularly ordinary breads. The small baker frequently finds it more profitable to purchase some of the products from the big bakeries than to make them himself. Moreover, by so doing he has more opportunity to specialize on the production of fancy or special products or on those products which must be delivered to the consumer fresh

BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

from the oven. One such product is the breakfast roll, which, owing to a regulation or law prohibiting the operation of bakeries before 5 o'clock in the morning, the large bakery is unable to produce in time for distribution for breakfast use except in that portion of its territory where it is located.

Bread and other bakery products except package goods are seldom handled by grocery stores.

A few of the large bakeries are owned and operated by flour-milling companies and, vice versa, a few bakeries operate mills for the production of their own flour; but in most cases bakeries are nowise connected with the milling industry.

According to statements made by tradespeople, the shop-type bakery produces more than 80 percent of the commercial breads used in Germany and approximately 95 percent of the commercial wheat-flour products used. Breakfast rolls constitute the major portion of the wheat-flour products.

## "Custom" baking

In connection with the merchandising of bakery products, one interesting practice observed by the writer was that of "custom" baking. In some of the agricultural regions the farmer delivers his grist of grain to the baker, who, after weighing it, credits him with a certain quantity of bread which may be taken from day to day as needed. At the place (in Eastern Germany) where this practice was observed, the baker was allowing the farmer 35 kilograms of great for 50 kilograms of grain. This rate of exchange applied only to the cheapest types of bread. Another interesting practice prevailing in villages in some sections of the country is that of housewives' making up their own bread dough and having it baked by the village baker. This, however, is not a general practice. Also the housewife sometimes has her puddings and certain other preparations or mixtures baked by the neighborhood baker.

## Commercial baking methods

Automatic electric mixers are used for preparing the doughs in large bakeries and in many small ones as well. In using these mixers the yeast and salt, in the afternoon preceding the baking, are placed in separate sections of the mixing bowl (which also serves as a fermentation trough). Also, at that time the flour is weighed out and placed in a container above the bowl. Likewise the required amount of water for the mixing is placed in another container above the mixing bowl. Between 2 and 4 o'clock in the morning, the flour and water are automatically dumped into the mixing bowl and the mixer starts operating. The mixing proceeds for 5 minutes and then automatically stops.

## BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

In another hour the mixer again automatically starts and mixes for 5 minutes. These operations are controlled by an electric device attached to a clock. At 5 o'clock when the baker arrives, the dough needs only handling and proofing, after which it is ready for the oven. Only the slow speed bowl type of mixer is used.

The straight dough method of baking is the one most generally employed where electric mixers are used. The sponge and dough method is not practical for use with these mixers, especially during the summer months. The length of time for dough fermentation is usually 2 hours or less. The doughs for the hearth-baked breads are generally proofed in cork or paper composition bowls. Most breads are of the hearth-loaf type. Some breads are paper wrapper, but most are not. The common or ordinary breads contain only flour, water, salt, a pinch of sugar, and yeast. Milk and fats are used only in the fancy or special breads and the better types of rolls.

In shops which do not employ the electric mixer, both the straight dough and the sponge and dough methods of baking are used. The latter, however, best suits the conditions under which the small baker has to operate, particularly with respect to those products for breakfast use, namely, rolls. This method is supposed to produce rolls of better flavor. It also requires less yeast, but it is claimed that this is not the controlling reason for its use. Probably the chief reason is that the sponge can be set the night before, thereby making it possible to prepare and handle the doughs a little more quickly in the morning. The straight dough method is generally used in the production of bread for meeting unexpected requirements and for those requirements that need not be filled the first thing in the morning.

### Quality considerations

The water-absorption capacity of a flour, although of importance, is given little attention by the average German baker. He concerns himself about it only when there is a very marked change in capacity from the ordinary. Flour quality is judged chiefly on the basis of its ability to produce a loaf of good exterior and interior appearance and of good volume. The crumb should be of light texture and have fairly small pores of uniform size. The crust should be brown in color and rather hard and crispy. Any expansion of the dough which takes place in the oven must be in a vertical direction rather than a horizontal direction. Flours are required which are capable of producing dough of good stability and gassing power and which are suitable for the short fermentation method used in baking.

The desirable rye bread characteristics are: Crust - dark brown to almost black in color and fairly smooth without breaks or gashes; shape - rounded, neither flat nor high; texture - somewhat solid with very small pores.

BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

## Bakery products

### Bread types

The ordinary breads used in Germany are of 5 general types; i.e., (1) rye bread made from 100-percent or nearly 100-percent rye flour, (2) mixed rye and wheat bread, (3) coarse rye bread made from coarse rye meal of 90- to 100-percent extraction, (4) wheat bread (rolls and loaf bread) made from wheat flour, and (5) health breads made from whole-wheat flour or meal.

Rye bread is the type principally used in some sections, while in other sections mixed rye and wheat bread is the principal type used. In the eastern provinces, East Prussia, Brandenburg, Crenzmark, Lower and Upper Silesia, and in Saxony, rye breads or those containing nearly 100 percent rye predominate. Pomerania is the only province in the eastern tier of provinces in which mixed rye and wheat breads are preferred, and even in that province such bread is of secondary importance. In the western part of the country, the provinces of Hanover and Schleswig-Holstein also prefer rye breads containing a nearly 100-percent rye flour, but this preference is not so pronounced as in the eastern provinces. In the 3 far western provinces, Hesse-Nassau, Westphalia, and Rhineland, however, there is a distinct preference for breads containing a relatively high percentage of wheat flour. The consumption of coarse rye bread, although considerably less than that of rye flour bread, is second in importance.

Wheat flour breads of the loaf type are not much used. This type of bread is generally classed as a luxury. Its use is confined largely to the Sunday morning breakfast of the middle and upper classes as a substitute for fresh rolls, which are unobtainable on that morning of the week. Among the poorer classes it is sometimes eaten on festive occasions. On the other hand, wheat-flour bread in the form of rolls is of considerable importance. Consumption of this type far exceeds that of the loaf type of wheat-flour bread. Everywhere throughout Germany rolls constitute an important part of the breakfast among all classes of people except farmers and the poorest paid laboring people.

Whole-wheat breads are seldom used, except those given special processing or containing special ingredients that are supposed to have a beneficial effect on the consumers' health. These, therefore, come under the class of health breads. They are relatively high in price and, like wheat-flour breads, are in the luxury class.

Within each of the bread types referred to above there are a number of varieties differing as to form or composition. A partial description of the principal varieties follows:

BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

Rye flour breads - Rye flour breads are of 3 general qualities: the "fine" bread made from patent rye flour; landbrot (country bread) made from a 70-percent extraction rye flour; and Kommissbrot made from an 82-percent extraction rye flour. These vary in color from a light grey to a dark grey or brown. The first 2 are the most common types of bread used and generally contain some wheat flour, varying according to consumer requirements in different districts from 0 to 40 percent. In western and central Germany the loaves are usually of oblong shape, but in eastern Germany they are flat and round. The most popular size of loaf weighs 1,250 grams (2.55 pounds).

Whole meal rye breads - These are the so-called "Schwarzbrots" or black breads and pumpernickel. They are made from rye flour or meal of 90- to 100-percent extraction. The so-called Schwarzbrot is usually made of a rye meal from which the coarse bran has been removed with the addition sometimes of a small percentage of whole-wheat meal. Pumpernickel is made from 100-percent rye meal.

Wheat-flour loaf breads - These are generally worked with milk, fat, and sugar, and baked both as pan and hearth breads. Because they are in the luxury class of products they are usually made in the small sizes of 250 to 500 grams. These breads are generally not quite as light in texture as American breads, but in other respects are very similar. Most of the wheat bread seen by the writer was of a crumbly character, denoting either the use of a weak flour or too much fat. The decrease in the use of foreign wheats in recent years may be responsible for this characteristic because it is generally conceded by German bakers that domestic wheats are too weak for the production of good bread.

Breakfast rolls - The simplest shaped rolls are smooth and round or oval, formed mostly in doubles. These are common all over Germany. The most popular shape is the pressed or cut roll, which, due to the operation of pressing or cutting, has a greater area of crust surface, a desirable characteristic. This type of roll is made with a shorter dough than is used for the smooth roll. For both of these types glutenous flours are used, which are favorable to the formation of a smooth crust and a full, appealing volume. Some milk is generally used in making these rolls. Other shapes and types of rolls are also made, but are not so widely used. These generally are of more complicated shape or contain ingredients that make them more expensive. Some are made from mixed wheat and rye flour. Some are sprinkled with caraway seeds, poppy seeds, or salt, and some contain a high proportion of fat.

Whole-wheat breads - These, as stated before, are usually of the so-called "health" type. They vary considerably in composition.

Zwieback and rusks - These are important bakery products in Germany and their use is widespread. Their combined production is probably

## BREAD GRAIN CONSUMPTION AND TRADE IN GERMANY, CONT'D

greater than that of wheat-flour bread. The large bakeries are the chief producers.

Knäckebrot - This is a crispy, hard, water-type of cracker and is very widely used. It is produced in 3 qualities or grades and is made from whole, unpeeled rye without yeast.

Pastries and cakes - The cakes and pastries of Germany are mild in richness and of inferior quality as compared with American cakes and pastries. Except in the case of "Baumkuchen," which is the cake par excellence of Germany, there is not much tendency toward the confection type of cakes. As a general rule, the cakes produced are of simple form and composition.

Tea biscuits - The short bread and confection types of tea biscuits are made but their production or use is not of nearly so great importance as in England. German people are not especially fond of sweet goods.

Pretzels - Pretzels are an important special wheat-flour product of Germany and are widely used. There are an infinite number of different kinds of pretzels sold in Germany, ranging from soft to hard and flinty, some with salt and some without, some sweet, some made with yeast, and some without yeast. One German baking recipe book lists 176 different sorts. Preference is given to one or another type according to district, but it may be said that pretzels are very popular throughout Germany. The section in which they are most popular is Bavaria. Except for a few of the most popular kinds, pretzels are produced as a side line in the small bakery shop. The pretzel is the official or special insignia of the baking industry, and over most of the baking establishments throughout the country may be seen a large, gilded pretzel.

### Change in dietary habits

The change in living habits which is taking place because of the adoption of machine methods of production is necessitating some change in dietary habits. Wheat breads are more easily digested than the heavy rye breads and with the tendency toward less manual labor and more sedentary occupations people will turn to wheat breads. This has already taken place to some extent in the industrial sections of Germany, as is evidenced from the fact that the breads consumed there generally have a higher content of wheat flour than those consumed in the agricultural sections. Another influence which may cause some decline in the consumption of rye bread is the tendency among the younger generation of Germans to be more temperate in their use of beer than preceding generations. Rye bread and beer are an inseparable combination; consequently, when people drink less beer, they will undoubtedly eat less rye bread.

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WHEAT: Closing Saturday prices of December futures

| Date | Chicago |  | Kansas City |  | Minneapolis |  | Winnipeg a/ |  | Liverpool a/ |  | Buenos Aires b/ |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | 1934 | 1935 | 1934 | 1935 | 1934 | 1935 | 1934 | 1935 | 1934 | 1935 | 1934 | 1935 |
|  | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents |
| High c/... | 113 | 96 | 109 | 98 | 118 | 114 | 98 | 90 | 101 | 90 | d/78 | e/74 |
| Low c/.... | 89 | 82 | 83 | 78 | 90 | 83 | 79 | 82 | 77 | 71 | d/57 | e/62 |
| Aug. 24... | 105 | 91 | 102 | 92 | 111 | 106 | 88 | 85 | 92 | 81 | f/71 | e/64 |
| 31... | 104 | 90 | 102 | 92 | 110 | 108 | 84 | 82 | 91 | 80 | f/68 | e/64 |
| Sept. 7... | 107 | 94 | 105 | 97 | 114 | 114 | 88 | 86 | 91 | 85 | f/67 | e/66 |
| 14... | 104 | 94 | 101 | 98 | 111 | 112 | 86 | 90 | 88 | 90 | 64 | e/74 |

a/ Conversions at noon buying rate of exchange. b/ Prices are of day previous to other prices. c/ July 1 to date. d/ October and December futures. e/ November futures. f/ October futures.

WHEAT: Weekly weighted average cash price at stated markets

| Week ended | All classes and grades six markets |  | No. 2 Hard Winter Kansas City |  | No. 1 Dk.N.Spring Minneapolis |  | No. 2 Hard Amber Durum Minneapolis |  | No. 2 Red Winter St. Louis |  | Western White Seattle a/ |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | 1934 | 1935 | 1934 | 1935 | 1934 | 1935 | 1934 | 1935 | 1934 | 1935 | 1934 | 1935 |
|  | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents |
| High b/... | 122 | 101 | 109 | 113 | 124 | 131 | 153 | 120 | 105 | 98 | 95 | 78 |
| Low b/... | 89 | 93 | 88 | 93 | 97 | 109 | 110 | 101 | 89 | 85 | 74 | 74 |
| Aug. 24... | 117 | 97 | 107 | 103 | 119 | 127 | 145 | 118 | 102 | 93 | 88 | 76 |
| 31... | 118 | 100 | 106 | 107 | 118 | 129 | 148 | 113 | 102 | 91 | 88 | 74 |
| Sept. 7... | 119 | 98 | 108 | 112 | 121 | 129 | 152 | 108 | 105 | 93 | 89 | 75 |
| 14... | 122 | 101 | 109 | 113 | 124 | 131 | 153 | 112 | 104 | 98 | 89 | 76 |

a/ Weekly average of daily cash quotations, basis No. 1 sacked 30 days delivery.
b/ July 1 to date.

WHEAT: Price per bushel at specified European markets, 1934-35 and 1935-36

| Date | Range | Rotterdam Hard Winter No. 2 | Rotterdam Manitoba No. 3 | Rotterdam Argentina a/ | Rotterdam Australia b/ | Berlin c/ | Paris | Milan | England and Wales |
|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  | Domestic | Domestic | Domestic | Domestic |
|  |  | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents |
| 1934-35 d/ | High.... | 97 | 103 | 83 | 97 | 213 | 240 | 201 | 74 |
|  | Low..... | 74 | 85 | 61 | 76 | 210 | 197 | 189 | 67 |
| 1935-36 d/ | High.... | 85 | 90 | 72 | 78 | 229 | 150 | 233 | 74 |
|  | Low..... | 74 | 81 | 63 | 71 | 210 | 121 | 205 | 61 |
| July 25... |  | 83 | 86 | 72 | 72 | 228 | 126 | 218 | 73 |
| August 1.. |  | 85 | 89 | 72 | 74 | 228 | 121 | 223 | 71 |
| 8.. |  | 81 | 90 | 70 | 78 | 228 | 121 | 227 | 71 |
| 15.. |  | 81 | 90 | 70 | 78 | 210 | - | 233 | 61 |

Division of Statistical and Historical Research. Prices at Paris and Milan are of day previous to other prices. Prices in England and Wales are for week ending Saturday. Prices converted at current exchange rates.

a/ Barusso. b/ F.A.Q. c/ Producer's fixed price from August 16, 1934. d/ July 1 to date.

FEED GRAINS AND RYE: Weekly average price per bushel of corn, rye, oats, and barley at leading markets a/

| Week ended | Corn | | | | | | Rye | | Oats | | Barley | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Chicago | | | | Buenos Aires | | Minneapolis | | Chicago | | Minneapolis | |
| | No. 3 Yellow | | Futures | | Futures | | No. 2 | | No. 3 White | | No. 2 | |
| | 1934 | 1935 | 1934 | 1935 | 1934 | 1935 | 1934 | 1935 | 1934 | 1935 | 1934 | 1935 |
| | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents |
| High b/ .. | 80 | 96 | c/80 | c/81 | 64 | 38 | 90 | 80 | 56 | 58 | 113 | 113 |
| Low b/ ... | 46 | 76 | c/56 | c/72 | 47 | 37 | 53 | 42 | 29 | 27 | 66 | 41 |
| | | | Sept. | Sept. | Oct. | Oct. | | | | | | |
| August 17. | 76 | 85 | 75 | 76 | 63 | 37 | 90 | 44 | 50 | 28 | 94 | 52 |
| 24. | 78 | 80 | 77 | 75 | 64 | 37 | 90 | 45 | 51 | 28 | 98 | 51 |
| 31. | 80 | 76 | 79 | 72 | 63 | 37 | 89 | 45 | 53 | 27 | 101 | 67 |
| Sept. 7... | 80 | 77 | 80 | 74 | 62 | 37 | 90 | 44 | 56 | 28 | 105 | 64 |
| | | | Dec. | Dec. | | | | | | | | |
| 14... | 80 | 82 | 78 | 57 | - | 38 | 88 | 45 | 56 | 30 | 113 | 53 |

a/ Cash prices are weighted averages of reported sales; future prices are simple averages of daily quotations. b/ For period January 1 to latest date shown.
c/ June - August.

FEED GRAINS: Movement from principal exporting countries

| Item | Exports for year | | Shipments 1935, week ended a/ | | | Exports as far as reported | | |
|---|---|---|---|---|---|---|---|---|
| | 1933-34 | 1934-35 b/ | Aug. 31 | Sept. 7 | Sept. 14 | July 1 to | 1934-35 b/ | 1935-36 b/ |
| | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | | 1,000 bushels | 1,000 bushels |
| BARLEY, EXPORTS: c/ | | | | | | | | |
| United States.... | 5,935 | 4,050 | 715 | 1,038 | 69 | Sept.14 | 1,091 | 3,066 |
| Canada .......... | 1,547 | 14,453 | | | | Aug. 31 | 1,628 | 1,819 |
| Argentina ........ | 23,781 | 20,129 | 50 | 91 | 14 | Sept.14 | 3,776 | 1,725 |
| Danube coun. d/.. | 27,707 | 7,870 | 8 | 239 | 371 | Sept.14 | 2,278 | 4,563 |
| Total ......... | 58,970 | 46,502 | | | | | 8,773 | 11,173 |
| OATS, EXPORTS: c/ | | | | | | | | |
| United States.... | 1,405 | 1,147 | 0 | 1 | 2 | Sept.14 | 27 | 114 |
| Canada .......... | 8,336 | 17,110 | | | | Aug. 31 | 2,572 | 2,263 |
| Argentina........ | 20,385 | 44,072 | 447 | 275 | 613 | Sept.14 | 8,807 | 4,275 |
| Danube coun. d/.. | 2,027 | 10 | 20 | 0 | 10 | Sept.14 | 0 | 30 |
| Total ......... | 32,153 | 62,339 | | | | | 11,406 | 6,682 |
| CORN, EXPORTS: e/ | 1932-33 | 1933-34 | | | | Nov.1 to | 1933-34 | 1934-35 |
| United States.... | 7,259 | 4,832 | 42 | 0 | 0 | Sept.14 | 4,204 | 776 |
| Danube coun. d/.. | 73,299 | 19,913 | 34 | 17 | 0 | Sept.14 | 16,417 | 14,834 |
| Argentina........ | 186,050 | 228,864 | 4,862 | 6,098 | 5,563 | Sept.14 | 202,305 | 214,037 |
| South Africa d/.. | 12,610 | 8,583 | 569 | 636 | 518 | Sept.14 | 1,931 | 18,016 |
| Total ......... | 279,218 | 262,192 | | | | | 224,857 | 247,663 |
| United States imports ........ | 169 | 1,362 | | | | July 31 | 221 | 24,911 |

Compiled from official and trade sources.
a/ The weeks shown in these columns are nearest to the date shown. b/ Preliminary, c/ Year beginning July 1. d/ Trade sources. e/ Year beginning November 1.

COTTON: Price per pound of representative raw cottons at Liverpool, September 6, 1935, with comparisons

| Description | 1935 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | July | | | August | | | | | Sept. |
| | 12 | 19 | 26 | 2 | 9 | 16 | 23 | 30 | 6 |
| | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents |
| American - | | | | | | | | | |
| Middling | 14.32 | 14.49 | 14.06 | 13.79 | 13.41 | 13.57 | 13.10 | 12.85 | 12.56 |
| Low Middling | 13.60 | 13.77 | 13.34 | 13.07 | 12.68 | 12.85 | 12.38 | 12.13 | 11.84 |
| Egyptian (Fully good fair) | | | | | | | | | |
| Sakellaridis | 16,49 | 16,58 | 16.69 | 16.70 | 16.76 | 16.92 | 16.54 | 16.46 | 16.71 |
| Uppers | 15.37 | 15.32 | 15.26 | 15.30 | 15.02 | 15.21 | 14.86 | 14.68 | 14.58 |
| Brazilian (Fair) | | | | | | | | | |
| Ceara | 13.70 | 13.77 | 13.44 | 13.17 | 12.79 | 12.95 | 12.48 | 12.13 | 11.94 |
| Sao Paulo | 14.12 | 14.18 | 13.86 | 13.59 | 13.20 | 13.36 | 12.89 | 12.54 | 12.36 |
| East Indian- | | | | | | | | | |
| Broach (Fully good) | 12.28 | 12.49 | 12.06 | 11.69 | 11.30 | 11.34 | 10.68 | 10.43 | 10.36 |
| Comra No. 1, Fine | 11.66 | 11.79 | 11.50 | 11.19 | 10.74 | 10.78 | 10.02 | 9.77 | 9.68 |
| Sind (Fully good) | 8.63 | 8.75 | 8.52 | 8.38 | 8.15 | 8.32 | 7.82 | 7.58 | 7.81 |
| Peruvian (Good) | | | | | | | | | |
| Tanguis | 15.66 | 15.73 | 15.31 | 15.03 | 14.65 | 14.81 | 14.34 | 13.99 | 13.79 |

Compiled by Foreign Agricultural Service Division from the Liverpool Cotton Association Weekly Circular. Converted at current exchange rate.

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BUTTER: Price per pound in New York, San Francisco, Copenhagen, and London, September 19, 1935, with comparisons

| Market and description | 1935 | | 1934 |
|---|---|---|---|
| | September 12 | September 19 | September 20 |
| | Cents | Cents | Cents |
| New York, 92 score | 26.5 | 25.8 | 26.0 |
| San Francisco, 92 score | 29.0 | 28.0 | 28.0 |
| Copenhagen, official quotation | 23.0 | 22.9 | 18.0 |
| London: | | | |
| Danish | 28.3 | 28.4 | 23.4 |
| New Zealand | 25.1 | 24.5 | 16.5 |
| Dutch | 22.2 | 23.0 | a/ |
| Estonian | 22.3 | a/ | a/ |
| Latvian | a/ | a/ | a/ |
| Lithuanian | 21.7 | 21.6 | a/ |
| Siberian | 22.2 | 21.7 | a/ |

Foreign prices converted at current rates of exchange.
a/ No quotation.

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GRAINS: Exports from the United States, July 1 - Sept. 14, 1934 and 1935
PORK: Exports from the United States, Jan. 1 - Sept. 14, 1934 and 1935

| Commodity | July 1-Sept. 14 | | Week ended | | | |
|---|---|---|---|---|---|---|
| | 1934 | 1935 | Aug. 24 | Aug. 31 | Sept. 7 | Sept. 14 |
| | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels |
| GRAINS: | | | | | | |
| Wheat a/ | 2,616 | 78 | 0 | 0 | 0 | 10 |
| Wheat flour b/ | 3,849 | 1,824 | 66 | 103 | 66 | 174 |
| Barley a/ | 1,091 | 3,066 | 23 | 715 | 1,038 | 69 |
| Corn | 1,021 | 49 | 0 | 42 | 0 | 0 |
| Oats | 27 | 114 | 0 | 0 | 1 | 2 |
| Rye | 0 | 2 | 0 | 0 | 0 | 0 |
| | Jan. 1 - Sept. 14 | | | | | |
| | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds | 1,000 pounds |
| PORK: | | | | | | |
| Hams and shoulders | 47,560 | 42,404 | 761 | 1,027 | 515 | 918 |
| Bacon, including sides | 15,849 | 5,278 | 53 | 109 | 16 | 81 |
| Pickled pork | 12,455 | 6,272 | 4 | 74 | 5 | 1 |
| Lard, excluding neutral | 348,567 | 78,145 | 619 | 573 | 432 | 240 |

Division of Statistical and Historical Research. Official records, Bureau of Foreign and Domestic Commerce.

a/ Included this week: Pacific ports, wheat, 10,000 bushels; flour 23,400 barrels; from San Francisco; barley 69,000 bushels; rice 899,000 pounds. b/ Includes flour milled in bond from Canadian wheat, in terms of wheat.

WHEAT, INCLUDING FLOUR: Shipments from principal exporting countries as given by current trade sources, 1933-34 to 1935-36

| Country | Total shipments | | Shipments 1935 week ended | | | Shipments July 1-Sept. 14 | |
|---|---|---|---|---|---|---|---|
| | 1933-34 | 1934-35 | Aug. 31 | Sept. 7 | Sept. 14 | 1934 | 1935 |
| | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels | 1,000 bushels |
| North America a/ | 220,616 | 168,712 | 2,584 | 2,161 | 2,633 | 42,064 | 25,386 |
| Canada, 4 markets b/ | 194,213 | 176,059 | 7,251 | 4,081 | 5,101 | 52,442 | 76,924 |
| United States c/ | 37,002 | 121,532 | 103 | 66 | 184 | 6,465 | 1,902 |
| Argentina | 140,128 | 186,228 | 1,892 | 2,432 | 3,433 | 43,172 | 27,473 |
| Australia | 90,736 | 111,628 | 1,080 | 1,393 | 1,556 | 19,472 | 15,893 |
| Russia d/ | 26,656 | 1,696 | 1,144 | 1,296 | 592 | 912 | 4,552 |
| Danube and Bulgaria d/ | 15,872 | 4,104 | 184 | 88 | 456 | 376 | 1,640 |
| British India | c/2,084 | e/2,001 | 0 | 0 | 0 | 240 | 0 |
| Total f/ | 496,092 | 474,369 | | | | 106,236 | 74,944 |
| Total European shipments a/ | 401,560 | 387,752 | 5,272 | | | g/ 71,352 | g/ 45,432 |
| Total ex-European shipments a/ | 123,352 | 142,424 | 1,840 | | | g/ 20,232 | g/ 19,600 |

Division of Statistical and Historical Research. Compiled from official and trade sources.

a/ Broomhall's Corn Trade News. b/ Fort William, Port Arthur, Vancouver, Prince Rupert, and New Westminster. c/ Official. d/ Black Sea shipments only. e/ Land trade not reported for April-June. f/ Total of trade figures includes North America as reported by Broomhall. g/ To August 31.

EXCHANGE RATES: Average weekly and monthly values in New York of specified currencies September 14, 1935, with comparisons a/

| Country | Monetary unit | Month | | | | | Week ended | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1933 | 1934 | 1935 | | | 1935 | | |
| | | Aug. | Aug. | June | July | Aug. | Aug. 31 | Sept. 7 | Sept. 14 |
| | | Cents | Cents | Cents | Cents | Cents | Cents | Cents | Cents |
| Argentina..... | Paper peso..... | 34.95 | 33.77 | 32.87 | 33.03 | 33.12 | 33.14 | 32.95 | 32.91 |
| Canada....... | Dollar......... | 94.28 | 102.38 | 99.91 | 99.93 | 99.78 | 99.66 | 99.60 | 99.66 |
| China........ | Shang. yuan.. | 28.07 | 33.93 | 40.40 | 38.68 | 36.86 | 36.93 | 37.06 | 37.39 |
| Denmark...... | Krone......... | 20.12 | 23.62 | 22.05 | 22.13 | 22.18 | 22.20 | 22.07 | 22.05 |
| England...... | Pound......... | 450.27 | 506.51 | 493.49 | 495.77 | 496.99 | 497.25 | 494.32 | 493.84 |
| France....... | Franc......... | 5.37 | 6.66 | 6.61 | 6.62 | 6.63 | 6.62 | 6.59 | 6.59 |
| Germany...... | Reichsmark... | 32.71 | 39.48 | 40.41 | 40.35 | 40.35 | 40.25 | 40.21 | 40.23 |
| Italy........ | Lira.......... | 7.22 | 8.66 | 8.26 | 8.23 | 8.21 | 8.19 | 8.14 | 8.14 |
| Japan........ | Yen........... | 26.90 | 29.99 | 28.99 | 29.15 | 29.32 | 29.38 | 29.13 | 29.03 |
| Mexico....... | Peso.......... | 28.11 | 27.73 | 27.78 | 27.77 | 27.75 | 27.74 | 27.78 | 27.76 |
| Netherlands. | Guilder....... | 55.38 | 68.38 | 67.87 | 67.99 | 67.78 | 67.76 | 67.62 | 67.49 |
| Norway....... | Krone......... | 22.65 | 25.45 | 24.79 | 24.91 | 24.95 | 24.90 | 24.84 | 24.81 |
| Spain........ | Peseta........ | 11.46 | 13.80 | 13.70 | 13.73 | 13.73 | 13.71 | 13.66 | 13.66 |
| Sweden....... | Krona......... | 23.23 | 26.12 | 25.44 | 25.56 | 25.62 | 25.64 | 25.49 | 25.46 |
| Switzerland.. | Franc......... | 26.53 | 32.95 | 32.68 | 32.75 | 32.72 | 32.65 | 32.54 | 32.53 |

Federal Reserve Board

a/ Noon buying rates for cable transfers.

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LIVESTOCK AND MEAT: Price per 100 pounds in specified European markets, September 11, 1935, with comparisons a/

| Market and item | Week ended | | |
|---|---|---|---|
| | September 12, 1934 | September 4, 1935 | September 11, 1935 |
| | Dollars | Dollars | Dollars |
| GERMANY: | | | |
| Prices of hogs, Berlin............ | 16.73 | 18.79 | 18.79 |
| Prices of lard, tcs., Hamburg..... | 18.82 | 19.16 | 19.16 |
| UNITED KINGDOM: b/ | | | |
| Prices at Liverpool 1st. quality | | | |
| American green bellies.......... | Nominal | Nominal | Nominal |
| Danish wiltshire sides.......... | 21.89 | 18.42 | 18.73 |
| Canadian green sides............ | 20.79 | 17.09 | 17.40 |
| American short green hams....... | 20.33 | 23.24 | 23.13 |
| American refined lard........... | 9.59 | 16.19 | 16.14 |

Liverpool quotations are on the basis of sales from importer-to-wholesaler.

a/ Converted at current rate of exchange.

b/ Week ended Friday.

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